

SIX FLAGS NEW ENGLAND	
SUBJECT: HEARING CONSERVATION PROGRAM	SAFETY REFERENCE MANUAL
SECTION: 21	
EFFECTIVE: January 2016	SUPERSEDES: ALL PREVIOUS
CFR #: 29 CFR <b>1910.95</b> – <i>Subpart G</i> and <b>1926.52</b> – <i>Subpart D</i>	

## 21.1 PURPOSE

To define the minimum requirements of an adequate Hearing Conservation Program as required by 29 CFR 1910.95.

## 21.2 GENERAL

All associates of SIX FLAGS NEW ENGLAND who are exposed to noise levels exceeding 85dB for an eight-hour time weighted average ~ TWA) are covered by this program. Documentation using dosimeters and sound level meters must be made to distinguish exposure levels.

## 21.3 DEFINITIONS

STANDARD THRESHOLD SHIFT - A change in hearing threshold relative to the baseline audiogram of an average 10dB or more at 2000, 3000, and 4000 Hz in either ear.

ATTENUATION - The ability to reduce noise.

TIME WEIGHTED AVERAGE (TWA) That sound level which, if constant over an 8-hour exposure, would result in the same noise dose as is measured.

NOISE REDUCTION RATING NRR) - Developed by the EPA to assess the adequacy of the attenuation of hearing protectors.

DECIBEL (dB) - Unit of measurement of the sound level.

REPRESENTATIVE EXPOSURE - Measurement of an associate's noise dose or 8-hour TWA sound level that the employer deems to be representative of the exposures of other associates in the workplace.

## 21.4 EXPOSURE MONITORING

### 21.4.1 Monitoring

Sound level meter measurements will be used as screening tools to determine the need for additional monitoring. When information indicates that any associate's exposure may equal or exceed an 8-hour TWA of 85dB, individual or representative exposure measurements will be conducted for affected associates through the use of personal noise dosimeters. For the purpose of the Hearing Conservation Program, associate noise exposures shall be computed without regard to any attenuation provided by the use of

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personal protective equipment.

#### **21.4.2 Observation**

During monitoring operations, SIX FLAGS NEW ENGLAND shall provide affected associates or their representatives with an opportunity to observe the measurements of associate noise exposure.

#### **21.4.3 Method of Noise Measurement**

Noise dosimeters or sound level meters shall comply with the following whenever evaluating exposure for this program:

- A. Dosimeters - Dosimeters shall meet the class 2A-90/85-5 requirements of the American National Standard Specification for Personal Noise Dosimeters S1.25-1978.
- B. Sound Level Meters - Sound Level Meters shall meet Type 2 requirements of the American National Standard Specification for Sound Level Meters S .4-1971 (R1976).

All continuous, intermittent, and impulsive sound levels which have been measured in accordance with this section shall be integrated into the exposure computation (80dB to 130dB).

#### **21.4.4 Calibration**

All dosimeters and sound level meters used to monitor associate noise exposure shall be calibrated before and after each day's use. Calibration will be conducted according to manufacturer's instructions, with appropriate maintenance and compatible equipment.

#### **21.4.5 Frequency**

After initial monitoring, monitoring will be repeated whenever changes in production, process, equipment, or controls increase noise exposures to the extent that additional associates may be affected at or above the action level or the attenuation provided by hearing protectors being used by associates may be rendered inadequate.

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## 21.5 IDENTIFY PERSONS EXPOSED TO HIGH NOISE LEVELS

The Safety Department will identify all employees exposed to noise equal to or greater than a TWA of 85 dB, using the following permissible noise exposures established by OSHA:

### Permissible Noise Exposures

<u>Duration/Day Hours</u>	<u>Sound Level dBA Slow Response</u>
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

When employees are subjected to sound levels exceeding those listed above, feasible engineering or administrative controls shall be utilized. If such controls fail to reduce the sound to acceptable levels, personal protective equipment shall be provided.

## 21.6 AUDIOMETRIC TESTING

### 21.6 General

SIX FLAGS NEW ENGLAND shall establish and maintain a mandatory audiometric testing program for all associates whose exposures equal or exceed an 8-hour TWA of 85dB. Audiometric testing will also be available for those associates who request to be tested, even though their noise exposure does not warrant the mandatory exam.

#### 21.6.2 Cost

This program shall be provided at no cost to the associate.

#### 21.6.3 Reliability

Audiometric tests shall be performed by a licensed or certified audiologist; otolaryngologist; qualified physician; or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation or who has satisfactory

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demonstrated competence in administering audiometric exams, obtaining valid audiograms, and properly using, maintaining, and calibrating audiometers. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist, or other qualified physician.

#### **21.6.4 Requirements**

All audiograms obtained through this program shall meet the requirements of 29 CFP 1910.95 Appendices C, D, and E.

#### **21.6.5 Procedure**

When audiometric testing is required, it should be offered at a time and location convenient to the associate. The associate must be informed of the purpose of the audiometric testing, the sequence of the test procedures, and the effects of noise on hearing. Audiograms shall be preceded by at least 14 hours without exposure to workplace noise.

NOTE: This may be accomplished by use of adequate hearing protectors. However, the associate should be well supervised and told of the need to avoid high levels of non-occupational noise exposure during this 14-hour period (such as exposure to loud music).

- A. **BASELINE AUDIOGRAM** - A baseline audiogram shall be performed within 6 months of an associate's first exposure at or above the action level of the 8-hour TWA of 85dB.
- B. **ANNUAL AUDIOGRAM** - A subsequent annual audiogram shall be obtained for each associate exposed at or above an 8-hour TWA of 85dB, if the noise exposure still exists.
- C. **EVALUATION OF AUDIOGRAM** - Each associate's annual audiogram shall be compared to the associate's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred.

An audiologist, otolaryngologist, or other qualified physician shall review those audiograms which initially indicate a significant threshold shift to determine if there is need for further evaluation. The following information shall be forwarded to the appropriate physician in order to complete the evaluation:

-a copy of the standard 29 CFR 1910.95 Occupational Noise Exposure

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-a baseline audiogram and most recent audiogram of the associate being evaluated

-measurements of background sound pressure levels in the audiometric test room used to obtain the audiogram

-records of the audiometer's calibrations

D. FOLLOW-UP PROCEDURE - If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the following steps shall be taken:

1. Associates not using hearing protectors shall be fitted and trained in the use of hearing protectors and issued protectors having adequate attenuation.
2. Associates already using hearing protectors shall be refitted and retrained in the use of hearing protectors and, if necessary, provided with new protectors having greater attenuation.

Inform the associate in writing, within 21 calendar days of the determination of the existence of a standard threshold shift, and enter the shift information on the OSHA 200 log as an illness.

E. REFUSAL OF EXAMINATION AND TREATMENT - When an associate elects not to participate in the audiometric testing program, the associate cannot be allowed to work in an area where the exposure exceeds an 8-hour TWA of 85dB.

#### **21.6.6 Testing Requirements**

Audiometric examinations shall be administered in such a way to meet all of the requirements set in 29 CFR 1910.95.

### **21.7 NOISE EXPOSURE REDUCTION**

When associates are exposed to sound levels exceeding permissible noise limits, then feasible engineering or administrative controls should be utilized.

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### **21.7.1 Engineering Controls**

The first approach to a noise problem should be to reduce the sound at its source through engineering designs, equipment modifications, and preventative maintenance. Some examples of engineering controls are as follows:

- A. Make sure machines are in good repair, properly oiled, with all worn or unbalanced parts replaced.
- B. Mount machines on rubber or plastic to reduce vibration and noise.
- C. Put silencers or mufflers on noisy components.
- D. When feasible, substitute a quiet process for a noisy one.
- E. Confine the sound of a machine within an acoustical enclosure.
- F. Isolate the operator in an acoustical booth.

### **21.7.2 Administrative Controls**

Administrative controls simply mean reducing the amount of time an associate is exposed to excessive noise. This can be achieved by rotating associates out of noisy positions, with each associate spending only the permissible amount of time exposed to the excessive noise. Another alternative is to perform high-level noise operations when fewer associates are present, if possible. (For example, if it only takes one person to do the job, then only expose one person.)

## **21.8 HEARING PROTECTION**

While engineering controls are being developed, or if they have been determined to be unfeasible, associates shall use personal protective equipment and be included in a complete Hearing Conservation Program.

### **21.8.1 Attenuation**

It is the responsibility of SIX FLAGS NEW ENGLAND to evaluate hearing protector attenuations for the specific noise environments in which the protector will be used. Any of the methods listed in Appendix B of 29 CFR 1910.95 may be used for this purpose. The easiest method uses the Noise Reduction Rating (NRR) which is listed by the manufacturer and printed on the hearing protector package. A hearing protector which

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has a higher NRR than another model protector is likely to give the wearer more protection. For example, hearing protector A has an NRR of 25 while hearing protector B has an NRR of 21. Hearing protector A will give most users 4dB more reduction in noise level at the ear than hearing protector B.

The noise level (dB) to which an associate is subjected while wearing a hearing protector can be estimated by subtracting the NRR from the measured workplace noise level. For example, if the workplace noise level is measured to be 100dB and a hearing protector having a NRR of 21 is used, most wearers would experience a noise level no greater than 79dB when appropriately wearing the hearing protector ( $100 - 21 = 79\text{dB}$ ).

**NOTE:** The adequacy of hearing protector attenuation shall be re-evaluated whenever associate noise exposures increase significantly. If it becomes necessary, additional or more effective hearing protectors shall be provided.

### **21.8.2 Requirements**

Hearing protectors must attenuate associate exposure at least to a TWA below 90dB. For associates who have experienced a standard threshold shift, the hearing protector must attenuate associate exposure to a TWA of 85dB or below.

### **21.8.3 Availability and Selection**

Associates shall be given the opportunity to select their hearing protection from a variety of suitable hearing protectors provided by SIX FLAGS NEW ENGLAND. This does not mean that SIX FLAGS NEW ENGLAND will provide an unlimited number of protectors to choose from, but the Company will make an effort to provide associates with more than one type and size of protector. Once each noise environment has been evaluated, and the majority of associates have agreed to specific types and sizes of protectors, there may no longer be a need to keep such a varied selection available.

It should be noted that each hearing protector available shall have the appropriate NRR to reduce the noise level in the workplace to a permissible level at the ear.

### **21.8.4 Fitting and Training**

SIX FLAGS NEW ENGLAND shall assure that all associates who are required to wear hearing protection shall receive proper initial fitting and adequate supervision in the correct use of the hearing protector in accordance with the manufacturer's instructions.

### **21.8.5 Care and Maintenance**

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Improper care of the hearing protector will reduce its effectiveness. The manufacturer's instructions for care and maintenance of the protector shall be adequately explained to the associate and sufficient supervision provided to assure compliance.

## **21.9 TRAINING AND EDUCATION**

A training program shall be instituted for all associates who are consistently exposed to noise levels at or above a TWA of 85dB. Associate participation in said training program shall be the responsibility of the associate's department management.

### **21.9.1 Training Requirements**

The training program shall be repeated annually for each associate included in the Hearing Conservation Program. Information which is provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

The training program shall, at a minimum, include the following:

- A. effects of noise on hearing
- B. the purpose of hearing protection; the advantages, disadvantages and attenuation of various types; and instruction on selection, fitting, use, and care of the protectors
- C. the purpose of audiometric testing and an explanation of the test procedures
- D. the right of the associate to access pertinent records

### **21.9.2 Access to Information**

A copy of 29 CFR 1910.95 Occupational Noise Exposure, as well as a copy of SIX FLAGS NEW ENGLAND Hearing Conservation Program, will be made available to any and all affected associates, their representatives or appropriate federal agencies. In addition, a copy of the standard and this procedure will be posted in applicable work areas.

### **21.9.3 Warning Signs**

Appropriate warning signs shall be posted at entrances to, or on the periphery of all well defined work areas in which associates may be exposed to noise levels at or above 90dB. Warning signs shall clearly indicate that the area is a high noise area and that hearing



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protectors are required. Whenever warning signs are posted, these signs shall indicate mandatory use of hearing protectors.

## **21.10 RECORD KEEPING**

Noise exposure measurement records are subject to the medical records access standard of 29 CFR 1910.95.

### **21.10.1 Testing Records**

SIX FLAGS NEW ENGLAND shall retain all associates audiometric test records obtained through this procedure. This record shall include the following:

- name and classification of the associate
- date of audiogram
- name of examiner
- date of the last acoustic of exhaustive calibration of the audiometer
- associate's most recent noise exposure assessment
- accurate records of the measurements of the background sound pressure levels in audiometric test rooms

### **21.10.2 Retention Period**

All records required by this procedure shall be retained as follows:

- A. Noise exposure measurement records shall be retained for two years.
- B. Audiometric test records shall be retained for the duration of the affected associate's employment.

### **21.10.3 Access to Records**

All records required by this procedure shall be provided upon request to associates, former associates, or representatives designated by the individual associate and the Occupational Safety and Health Administration. The provisions of 29 CFR 1910.20(a) - (e) and (g) - (i) apply to the access of records under this section.

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#### **21.10.4 Transfer of Records**

In event that SIX FLAGS NEW ENGLAND ceases to do business, SIX FLAGS NEW ENGLAND will transfer to the successor employer all records required to be maintained by this procedure. The successor employer shall be responsible for the retention for the remainder of the period prescribed by this procedure.